

Appl. No. 10/605,513  
Amdt. dated January 26, 2006  
Reply to Office action of November 04, 2005

### REMARKS/ARGUMENTS

#### I. Rejection of claims 1-4, 10-11, and 19-21 under 35 U.S.C. 103(a):

Claims 1-4, 10-11, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ming-Jiunn et al. (US 6,078,064, Ming-Jiunn hereinafter) in view of Seaford et al. (US 2003/0201460, Seaford hereinafter).

#### Response:

The applicants would like to point out how claim 1 is patentably distinguished from the cited prior art.

Claims 1, 20, and 21 each recite that the **nitride based** dual dopant contact layer comprises "at least a p-type dopant and an n-type dopant, and a material of the p-type dopant being different from a material of the n-type dopant".

Seaford teaches that two dopants, Be and C, can be used for preventing degradation problems in III-V semiconductor materials, such as GaAs. However, Be and C are used as dopants in GaAs, the conductive types for both Be and C are **p-type**.

Seaford teaches this, for example, in paragraph [0010]:

"An additional aspect of the present invention is a semiconductor layer having two or more epitaxially grown impurities of the same carrier type. Preferably, the two or more impurities each has a smaller covalent radius than the layer atoms. More preferably, the two or more impurities are grown at substantially equivalent concentrations. The present invention also provides a method for creating a semiconductor layer having two or more impurities introduced during layer formation."

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Therefore, Seaford does not teach using a p-type dopant and an n-type dopant in the GaAs semiconductor layer. Instead, Seaford teaches a first p-type impurity (Be) and second p-type impurity (C) in GaAs material.

5           However, nitride based materials have a different semiconductor property when Be is used as a dopant in nitride based materials. Be serves as a p-type dopant and C serves as an n-type dopant when they are used as dopants in nitride based materials.

10           Seaford does not teach a **nitride based** dual dopant contact layer comprising at least a **p-type** dopant and an **n-type** dopant, where a material of the p-type dopant is different from a material of the n-type dopant, as is recited in claims 1, 20, and 21. Furthermore, the dopants that Seaford teaches do not exhibit the same properties when applied to a nitride based dual dopant contact layer, and one skilled in the art would not find it obvious to take Seaford's teachings about dopants and apply it to  
15           Ming-Jiunn's nitride based layer since the doping properties are completely different from each other.

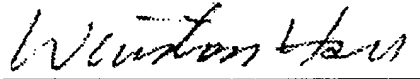
          Claims 2-11, and 19 are dependent on claim 1, and should be allowed if claim 1 is allowed. Reconsideration of claims 1-11, and 19-21 is respectfully requested.

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          In view of the above statements in favor of patentability, the applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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Sincerely yours,



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